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ABSTRACT

Tompkins Cortland Community College (New York) developed a procedure to recruit and train potential dairy farm workers. A number of marketing efforts were undertaken: distribution of 150 recruitment posters, distribution of public service announcements to 27 area news agencies, 76 paid radio spots broadcast by 4 stations, and staff member follow-up on 48 local residents' request for information on the dairy training program. The curriculum, designed by the advisory board with the cooperation of several dairy training experts, included three primary parts: orientation, classroom training, and job shadowing. The 20-hour dairy skills curriculum had four primary parts: feeding and nutrition, dairy cattle reproduction, the milking process, and milking equipment. Twenty-five enrollees began the program; 22 completed the classroom training. Almost half of those completing the training became employed on local dairy farms. A pretest-posttest assessed the effectiveness of the teaching methods. The average score on the pretest was 56 percent; the average score on the posttest was 85 percent. According to the student course evaluation, students responded well to the course, would have liked to be able to have more "hands-on" experience, and believed the program was pertinent to their needs and interests. The farmers who participated in the program were, for the most part, pleased with the students they worked with and were impressed with the program. (Appendixes include the curriculum and results of the student course evaluation and farmer evaluation. The back cover page lists other Agricultural Economics Extension publications and their report numbers. (YLB)

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DAIRY FARM WORKER TRAINING AT TOMPKINS CORTLAND COMMUNITY COLLEGE 1989-1990

Thomas R. Maloney
Timothy F. San Jule

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DAIRY FARM WORKER TRAINING AT TOMPKINS CORTLAND COMMUNITY COLLEGE

1989-90

Thomas R. Maloney
Timothy F. San Jule[1]

Preface

Since the mid-1980's, Tompkins Cortland Community College, in cooperation with Cornell Cooperative Extension, has conducted a variety of farm labor-related educational programs designed to improve the personnel management skills of area farm managers. The first such effort, presented in 1987, was a series of workshops which addressed employee recruitment and motivation. The workshops were taught by professionals from the local business community who had extensive experience in personnel management. The second series of workshops, taught in 1988, covered a variety of labor related topics including labor regulations, supervisory skills, management organization, and recruitment and training.

The workshops were presented in an attempt to address the growing concern about the difficulty of recruiting and retaining quality farm workers. Discussions throughout these workshops indicated that farmers were having increased difficulty finding and retaining qualified workers. As a result, staff members at Tompkins Cortland Community College and Cornell Cooperative Extension began to explore solutions to the farm labor supply problem. The result was a training program for dairy farm workers - specifically milkers. The program took place between September 1989 and November 1990.

The Need for Dairy Farm Worker Training

The dairy industry is a dominant economic force in Tompkins, Cortland, and Tioga counties. In 1989, dairy farms in this three county area housed over 43,000 dairy cows producing over 600 million pounds of milk. The estimated farm value of this milk production totalled in excess of $83 million. In the late 1980's weak milk prices and the attrition of dairy farmers in the area created a deficit milk supply situation. Milk handlers in the New

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York-New Jersey marketing area were demanding more milk than the upstate New York dairy producers could supply. While the economic climate was right for farmers to expand production, some voiced reluctance because of concern over their ability to recruit and retain the workers needed to successfully operate larger farms. A number of issues created the tight labor situation for agricultural producers in the Tompkins, Cortland, and Tioga county area. They included:

- **Demographics** - As the baby boom generation entered the workforce in the 1960's and 70's, there was a constant supply of 16 to 20-year-old workers. In recent years, that labor pool has been greatly reduced and is expected to remain low well into the 1990's.

- **Decrease in Unemployment** - In recent years, the economy has grown, causing a decrease in unemployment. From a high of 9.7 percent in 1982, the unemployment rate has dropped steadily to through the 1980's.

- **The Image of Farm Work** - Traditionally, agriculture has offered jobs with long hard hours and relatively low pay. In addition, few farm benefit packages can compete with those offered by non-farm businesses. These issues have created an undesirable image in the minds of some job applicants.

- **Decline in the Number of Agricultural Graduates** - Educational institutions, particularly two-year agricultural colleges, are not supplying the graduates that farm employers are demanding. This is due to both lower numbers of college-age students and the image of agricultural work.

- **Need for Improved Personnel Management Skills** - As farms grow in size and family labor makes up less of the farm workforce, more employees are hired. This creates a greater need for farmers to be good personnel managers, skilled in communication, motivation, delegation, training, etc.

In addition to the tight labor supply, farmers also raised concern over the lack of dairy production skills among the existing work force. A pilot study conducted by the New York State Department of Agriculture and Markets in the summer of 1989 illustrates this concern. Dairy farmers in the counties of Tompkins, Tioga, and Cortland were asked what issues gave them the most difficulty when managing employees.

Thirty-five percent indicated that lack of necessary skills contributed to difficulties in hiring new workers during the previous year. This illustrates the increasing need to improve the skills of existing dairy farm workers and to teach dairy farm skills to workers who do not have a farm background.

Upgrading the skills of existing workers and expanding the dairy farm labor pool are both critical needs which can be met through training.

Appalachin Regional Commission Training Grant

In the summer of 1988, Tompkins Cortland Community College staff members, Cooperative Extension representatives, and local dairy industry leaders met to discuss the application process for an Appalachin Regional Commission Grant to conduct dairy farm worker training. A variety of training issues were discussed and a decision was made to provide milking skills training for individuals not currently employed in the dairy industry. Tompkins Cortland Community College staff then incorporated the decisions of the group into an ARC Grant proposal. In the summer of 1989, the grant was approved for September 15, 1989 through September 15, 1990 (the grant period was later extended through April 30, 1991). Total funding provided by the grant was $59,779. The program had four primary objectives:

1) Recruit applicants from surrounding counties to participate in the program.

2) Train enrollees based on a curriculum of milking practices and related topics.

3) Place trained milkers in jobs and provide support during a one month probationary period.

4) Train farm managers in basic supervisory skills.

Advisory Board and Staff

After the grant was approved, a project director and part-time secretary were hired to conduct the program. The director's job was a half time position. The person chosen for it had a bachelor's degree in political science as well as dairy farm experience. In addition to the director's responsibilities, the individual was also employed as a milker on a local 300 cow dairy farm. Shortly after the director was hired, a seven member advisory board was formed to provide guidance and support for the program. During the first six months, the advisory board met every four to six weeks to discuss key decisions regarding applicant recruitment, curriculum development, program evaluation, job placement and other issues. Staff members and advisory board members and instructors initially involved in the project are listed in Appendix I.

Recruiting Applicants

Initially, the greatest concern of the advisory board and staff was to recruit a sufficient number of applicants to make the program a success. As a result, major emphasis was placed on marketing the program and encouraging individuals to participate. The following marketing efforts were undertaken:

- 150 recruitment posters were distributed. The posters described the program and included a photograph of people in a farm setting. Five paid recruitment ads were placed in three regional papers.
- Information was distributed to 27 area news agencies for use as public service announcements.
- Seventy-six paid radio spots were broadcast by four stations. Twelve local agencies with access to potential recruits were identified and visited.
- Staff members followed up on 48 local residents for information on the dairy training program. After an extensive marketing program, 29 individuals applied for the training.

Curriculum Design and Implementation

The curriculum was designed by the advisory board with the cooperation of several dairy training experts. The curriculum included three primary parts: orientation, classroom training, and job shadowing.

A. Orientation

The Advisory Board worked with the program director to design an effective orientation program. One of the primary objectives of orientation was to give applicants a realistic view of the dairy milking position. Twenty-five enrollees participated in the orientation program. Two orientation sessions were conducted, one on a Saturday, and one on a Thursday. Each lasted three to four hours. One session was held at a 300 cow free stall dairy farm with a milking parlor. The group had an opportunity to observe the milking process and discuss issues relative to working in a free stall facility. The second session was conducted at a farm with a tie stall barn and a pipeline milking system. Discussion centered around the working conditions

in a tie stall barn. During both visits, job expectations, working conditions, wages, and other related topics were explored.

B. Classroom Training

A dairy farm milking curriculum was developed specifically for this training program. At the time that the curriculum was being developed, a special advisory board meeting was called and invitations were extended to a variety of dairy professionals: Cooperative Extension Specialists, a staff member from the local artificial insemination cooperative, a staff member from Quality Milk Promotion Service, and staff members from the Cornell University Animal Science Department. The advisory board and invited guests spent most of the meeting discussing the curriculum and the topics that should be included to give enrollees a well-rounded understanding of the milker's job. A great deal of the discussion concentrated on the level at which the program should be taught. Since it was expected that the majority of enrollees would have limited dairy farm experience, it was decided that the curriculum should be taught at a basic level. The group also concluded that there would be a limit on how much information could be provided in this introductory curriculum. With those issues in mind, the dairy training grant staff and prospective instructors designed a 20 hour dairy skills curriculum. The curriculum included four primary parts:

1.)	Feeding and Nutrition	2.5 hours
2.)	Dairy Cattle Reproduction	2.5 hours
3.)	The Milking Process	10.0 hours
4.)	Milking Equipment	5.0 hours
	TOTAL	20.0 hours

The curriculum was taught in two different locations: Cortland and Ithaca. The Cortland program was taught at the Onondaga-Cortland BOCES on four consecutive Saturdays during February and March from 10:00 a.m. to 4:00 p.m. The Ithaca program was taught at Tompkins-Seneca-Tioga BOCES on eight consecutive Tuesday and Thursday evenings in February and March, from 7:00 to 9:30 p.m. The entire training program was videotaped and prepared for distribution as part of the Tompkins Cortland Community College resource library on farm labor. Inquiries regarding the use of these videotapes should be directed to Moody Sanford, Media Services Director, Tompkins Cortland Community College, Dryden, N.Y. 13053.

C. Job Shadowing

Job shadowing was the hands-on portion in this training program. The director contacted local dairy farmers to request that they provide a hands-on job shadowing experience to individuals in this program. Each applicant received two job shadowing experiences which were two to three hours in length. During the job shadowing experience, enrollees had the opportunity to work around the animals and practice the actual milking procedures they had learned in the classroom.

Results

A total of 25 enrollees began the program and 22 completed the classroom training. Almost half of those completing the training became employed on local dairy farms.

A. Program Participation

Twenty-five enrollees participated in the orientation which included visits to local dairy farms. Twenty-two enrollees completed the classroom sessions and 91 percent of the trainees successfully passed the post-test. The characteristics of the 22 trainees are summarized below:

Characteristics of 22 Trainees

Gender	Women: 12			Men: 10		
Age	15-20	21-25	26-30	31-40	41-50	55+
	5	1	5	7	3	1
Education	G.E.D.*	High School	College	Graduate Work		
	2	10	8	2		

**General Equivalency Diploma earned through Adult Education classes.*

Previous Farm Experience	None	Observation	Some Hands-On	Extensive
	11	5	4	2

B. Employment Status

Upon completion of job shadowing, participants were asked if they were interested in full or part-time employment. Eleven responded affirmatively. Dairy farmers who had participated in the job shadowing process were canvassed for possible job openings and job descriptions.

In addition, after hearing about the program, a number of dairy farmers seeking employees contacted the college. Introductions were made, positions were located and wages were agreed upon. The advisory board policy recommended a $5.00 per hour wage as a starting salary. This was acceptable in most instances.

Job shadowing was completed in early May, 1990. By the end of June, all who wanted employment had been placed. As of December, 1990, 10 of the original eleven participants who found employment on farms were still employed on those farms. One had moved from part to full-time status.

December Employment Status

Wage Rates Per Hour	$3-4	$4-5	$5-6	$6-7	$7+
	1	1	5	1	2

Evaluation

Several methods were used to evaluate the effectiveness of this program. First, all participants were given a test before the program began and after the program was completed. Second, at the conclusion of the course, students were asked to complete a course evaluation. Third, farmers who conducted the job shadowing portion of the program were asked to evaluate the student performance.

A. Pre-Test/Post-Test Summary

Appropriate methods of assessing the effectiveness of the teaching methods were discussed by the Advisory Board. A pre- and post-class test was decided upon.

A 15 question pre-test was given to every trainee on the first day of class. The average score was 56 percent. At the conclusion of the final day of class, a 25 question post-test was administered. The average score was 85 percent. The post-test was identical to the pre-test, except for the addition of 10 procedural questions. Twenty-two trainees completed the classroom sessions and 20 passed the post-test.

B. Student Course Evaluation

The students responded well to the course and would have liked to be able to have more "hands-on" experience. Twenty of them would take further courses. Several of the students thought that the information provided by one of the instructors was too technical and not appropriate for the course. Additionally, some of the participants thought that there should have been more class time. All 23 students believed that the program was pertinent to their needs and interests.

As a pilot project, this course proved to be very satisfactory, and the students' desire for more experience in job shadowing suggests opportunities for the future. Additional course offerings might include more "on the job" training, along with classroom instruction. A detailed summary of the student course evaluation can be found in Appendix III.

C. Farm Manager Evaluation

The farmers who participated in the program were, for the most part, pleased with the students they worked with and were impressed with the program. Again, like the students, they felt that more time "on the job" would be a benefit. Several of the farmers hired the students. Others indicated that they would have been willing to do so, if they had been looking for help. This program helped both parties, the students and the farmers. A detailed summary of the farm manager evaluation can be found in Appendix IV.

Farm Manager Education

The original purpose of this program was to expand the pool of qualified dairy farm workers in the region. The program's major emphasis was to accomplish this objective through orientation, training, and job shadowing. The advisory board and staff also recognized the importance of addressing the educational needs of dairy farm managers, since the manager's role in the process is an important one. Successful managers will reinforce classroom training while the student is on the job. In addition, human relations skills are very important when recruiting and training qualified employees. To address these issues, the dairy worker training grant also included a component of manager education. The first aspect of manager education is the resource library. A number of references related to dairy worker training and personnel management have been collected by the Tompkins Cortland Community College staff. Any of these may be borrowed by area farm managers. Included in the resource library is an edited videotape

of each of the classroom sessions in the dairy farm worker training curriculum.

The second thrust of manager education was a workshop focused on personnel management skills. A two day workshop on Leadership, Recruitment, Training, Team Building, and Family Issues in the Farm Workforce was planned for November 1990. Due to low enrollment, the workshop was cancelled. Interested farmers were then referred to other personnel management workshops to be conducted by Cooperative Extension.

Conclusions and Implications

This program proved successful in several respects. Participants were successfully recruited and trained. Upon completion of the program all of those who sought employment became successfully employed on local dairy farms. Staff and advisory board members learned a great deal by developing and implementing this program. Conclusions and implications are summarized here.

A. Enrollment

Original plans called for recruiting 60 applicants and teaching the curriculum four separate times. However, only 22 applicants applied and two separate sessions were held. Possible reasons for the low enrollment include: 1) A strong local labor market; 2) A negative image of dairy farm work as a long term career opportunity; 3) The physical demands of dairy farm work. Low enrollment was not due to a lack of awareness in the community. Marketing was carefully and extensively done in an attempt to recruit applicants for the program. Also, since the curriculum ended, eight individuals have asked that the program be repeated.

B. Part-Time Work Versus Full-Time Work

The three candidates who sought full-time work after the training program was over were immediately hired by local dairy farmers, and two are still employed. The 10 individuals who sought part-time work did not get jobs as quickly or as easily as those seeking full-time work. However, within one month of the program's completion, aggressive efforts by the director resulted in the placement of all individuals who sought work. One reason for the demand for full-time employees may be related to dairy farming tradition. The typical dairy farm employee is one who works 60 to 80 hours a week, six or more days a week, and is skilled in a variety of tasks. These tasks usually include milking, feeding, mechanics, equipment operation, and crop production. Also, it may be easier for some managers to supervise the work

of one full-time employee rather than the work of two or more part-time employees. Nonetheless, the traditional full-time dairy farm worker may no longer be available in today's labor market. If training programs such as the one conducted at Tompkins Cortland Community College can attract and train individuals interested in part-time work, dairy farm operators may be forced to think more carefully about using part-time workers in the farm operation. This part-time versus full-time issue is a possible area for future study. It would be interesting to know if the general dairy population prefers full-time workers over part-time workers and if so, why. It would also be beneficial to explore ways to use part-time workers effectively in dairy farm businesses.

C. Development of a Training Model

One of the greatest benefits of this program has been the development of a procedure for attracting and training potential dairy farm workers. While classroom and workshop training has traditionally been conducted for non-agricultural jobs, training for agricultural workers is a relatively new undertaking. The TC3 experience can serve as an example for the future design of other farm worker training programs. The videotapes of the classroom instruction provided in this program are an excellent resource for individuals who are interested in using this curriculum to train dairy farm workers. Likewise, the resource library is a benefit to local farmers who are interested in managing their employees more effectively.

References

1989 Farm Employment Pilot Project Report. New York State Department of Agriculture and Markets and New York State Department of Labor cooperating with New York Agricultural Statistics Service, 1989.

Maloney, Thomas R. "Farm Labor Is in Short Supply". Agricultural News Service, Cornell Cooperative Extension, Ithaca, N.Y., 1988.

New York Agricultural Statistics 1988-1989, State of New York Department of Agriculture and Markets.

New York Economic Handbook 1991, Agricultural Situation and Outlook, A.E. Ext. 90-30, Department of Agricultural Economics, Cornell University, December 1990.

Appendix I: DAIRY GRANT STAFF, ADVISORY BOARD AND INSTRUCTORS

Tompkins Cortland Community College Staff

Kathleen Habel, Director of Community Services

Timothy San Jule, Director, Dairy Training Grant

Dairy Grant Advisory Board

Thomas Maloney, Extension Associate, Cornell University -- Chair

Robert Aman, Dairy Farmer, Tioga County

Russell Beck, Dairy Farmer, Tompkins County

Carl Crispell, Regional Farm Management Specialist, Cornell Cooperative Extension

Bert Morse, Dairy Farmer, Cortland County

Debbie Potter, Dairy Farmer, Cortland County

Ronald Space, Chief of Plant Operations, New York State College of Agricultural and Life Science Teaching and Research Center, Cornell University

Instructors

Lennart Petersson -- Research Support Specialist, Animal Science, Cornell University

Robert Van Saun, D.V.M., and PhD candidate, Department of Animal Science, Cornell University

Steven Newman, Director Insemination Services, Eastern AI Cooperative

Appendix II: DAIRY GRANT CURRICULUM

Part 1. Dairy Feeding and Nutrition

(Time: 2-1/2 Hours)

I. Nutritional Anatomy and Physiology

A) Anatomy of the rumen
1. Reticulum
2. Rumen
3. Omasum
4. Abomasum

B) Rumen development and calf feeding

C) Digestive Process - definitions and descriptions
1. Mastication
2. Rumination
3. Eructation
4. Digestion

D) Nutrients - definition and description
1. Carbohydrates
2. Protein
3. Lipids (fats)
4. Minerals
5. Vitamins
6. Water

II. Identification of Feedstuffs

A) Define feed types
1. Roughages (forages)
2. Concentrates (grain)
3. Minerals and vitamins
4. Premixes and commercial grains
5. Supplements (NPN sources, antibiotics, growth permitants)

B) Feed storage systems
1. Direct cut (green chop)
2. Ensilage process
    a. bunker silos
    b. upright silos
    c. "ag-bags"
3. Dried feed

C) Display of typical feedstuffs for examination

III. Feeding Management

A) Nutrient Requirements
1. Energy, Protein, Fiber, Minerals, Vitamins
2. Activities: Maintenance, Growth, Lactation, Pregnancy
3. Dry matter intake

B) Overview of the gestation/lactation cycle as it pertains to feeding management

IV. Problem Identification (Time: 1/2 Hr.)

A) Potential nutritional diseases - descriptions and causes
1. Ketosis
2. Displaced abomasum
3. Hardware
4. Acidosis/Founder
5. Milk fat depression
6. Impaired reproduction
7. Fat cow syndrome

B) Identifying the "sick cow" - clinical signs of the cow off feed

C) Appropriate feeds to be fed, discussion of ingredients which may pose potential toxicity (e.g. - urea)

V. Glossary of Terms:

Ruminant
Nonruminant
Reticulum
Rumen
Omasum
Abomasum
Esophageal Groove
Microbes
Mastication
Rumination
Digestion
Carbohydrates
Fats
Minerals
Roughages (forages)
Concentrates (grain)
NPN
Dry Matter
As Fed Basis
Volatile fatty acids
Vitamins
Fermentation
Eructation
Nutrition
Nutritients
Protein
Fiber

DAIRY GRANT CURRICULUM
Part 2: Dairy Cattle Reproduction

(Time: 2-1/2 Hours)

I. Reproductive Anatomy and Physiology

A) Anatomy of the female reproductive tract - description and function of each component
   1. Ovaries
   2. Oviduct
   3. Uterus
   4. Cervix
   5. Vagina
   6. Vulva

B) Estrous cycle - description of length, physiology, physical and behavioral changes which take place

C) Gestation (pregnancy) - description of length and physical changes

D) Parturition and uterine involution - description of process and its importance

II. Reproductive Management

A) Overview of the gestation/lactation cycle as it relates to reproduction management

B) Estrus detection
   1. Record systems used to monitor estrus activity
   2. Use of herd health programs
   3. Heat detection aids

C) Breeding/artificial insemination - how it relates to estrus, the importance of proper heat detection and proper timing of AI

III. Problem Identification

A) Abnormal discharges - how to identify and what to do
   1. Estrous cycle
   2. Pregnancy
   3. Postpartum

B) Calving Problems (Dystocia) - categories of problems, how to identify, decision making process as to what should be done and when to call the veterinarian. Demonstrate some of the equipment used to facilitate calving.

C) Postpartum complications - identification and disposition
1. Uterine prolapse
2. Retained placenta
3. Milk fever
4. Downer cow syndrome
5. Toxic mastitis
6. Metritis
7. Udder edema
8. Calving paralysis

IV. Glossary of Terms

Ovaries
Oviduct
Cervix
Vulva
Corpus luteum
Placenta
Ovulation
Gestation (pregnancy)
Dystocia
Estrus (heat)
Bleeding off
Metritis
Uterus
Vagina
Follicle
Cystic follicle
Cotyledons
Conception
Parturition (calving)
Estrous cycle
Artificial insemination
Stringing mucus

DAIRY GRANT CURRICULUM
Part 3: The Milking Process

(Time: 10 Hours)

I. Physiology of Milk Letdown - Definition - Hormonal

A) Basic Udder Anatomy
1. Structural Support
2. Mammary Glands
3. Teat and Gland Cisterns
4. Milk Ducts
5. Glandular Tissue

B) Letdown Process
1. Oxytocin
2. Tactile Stimulation
3. Handling of Cows

II. Milk Quality - Definition - Taste and Composition

A) Somatic Cell Count

B) Bacterial Count

C) Fat

D) Protein

E) Reward System

III. Mastitis Control - Definition - Inflammation of Mammary Gland

A) Introduction- The Mastitis Problem
1. Prevalence and Economic Losses
2. Public Health Significance
3. Effects on Milk Composition and Quality

B) Types
1. Contagious - In the Cow
2. Environment - In the Barn
3. Others - In the Barn and In the Cow

C) Development of Mastitis
1. Invasion
2. Establishment of Infection
3. Inflammation
4. Tissue Response
5. Specific Bacterial Infections

D) Intramammary Infections
1. When and where does this occur?
2. Stress
3. Between Milking
4. During Milking

E) Identification
1. California Mastitis Test
2. Clinical Mastitis
3. Subclinical Mastitis

F) Mastitis Control Practice
1. At Milking Time
2. The Interval Between Milkings
3. Dry Period
4. Replacement Animals
5. Other Procedures

G) Treatment - Antibiotics
1. Lactation
2. Dry Cow Treatment

H) Penalty for Shipping Bad Milk

IV. Milking Procedures - Definition - Hygiene Practices During Milking

A) Prevention of Infections by Good Milking Practices

B) Antiseptic Agents

C) Teat Dips
1. Iodine
2. Chlorhexadine
3. Others

D) Agents
1. Sprayers
2. Dippers
3. Towels - Cloth, Paper
4. Strip Cup

E) Applications
1. Stripping
2. Premilking Teat Dipping or Spraying
3. Wet Paper Towel Using Water
4. Dry Paper Towel Wipe
5. Postmilking Teat Dipping or Spraying

F) No-No's
1. Common Towel
2. Laid Out Procedures Applied Poorly

G) Parlor Procedures
1. Optimize Milk Let Down
2. Optimize Milk Quality
3. Efficiency - Number of Cows Per Hour
4. Milking Parlor Configuration - Procedures

V. Small Bugs - Big Problems

VI. Do Not Underestimate Your Contribution to Good Quality Milk and Healthy Cows

Video
Discussion

DAIRY GRANT CURRICULUM
Part 4: Milking Equipment

(Time: 5 Hours)

I. History of Milking Machine

A) Principles

B) Pressure Difference - Use Analogies - McDonald's Coke

C) Why Vacuum Systems?
1. Efficiency
2. Keep Milking Units on the Cow

D) Liner Movement - Two Phases - Show Milking Unit

E) Milk Flow

II. Equipment - Components - Functions

A) Vacuum Pump

B) Regulator - Controller

C) Distribution Tank

D) Milk Line(s)

E) Pulsator Line(s)

F) Sanitary Trap

G) Pulsators

H) Receiver Jar

I) Milk Transfer Pump

J) Cooling System

K) Milk Bulk Tank

L) Milk and Pulsator Lines
1. Pressure Difference
2. Across Liner Wall

M) Automation
   1. Automatic Removers
   2. Milk Flow Sensing Devices
   3. Computers

IV. Operation

A) Vacuum Level
   1. Type of System
   2. Type of Components Used

B) Pulsation

V. Cow Movement - Free Stall Systems

A) Crowd Gates

B) Take it Easy

C) Observe Milking Parlors at T & R Center

VI. Trouble Shooting - Basic

A) Milk Flow Problems - Pulsation Failures

B) Units Fall Off the Cows - Vacuum Level

C) Maintenance - Milking Unit Components

VII. Milking Systems - Types

A) Buckets

B) Dumping Station

C) Pipeline

D) Parlor

VIII. Safety

Appendix III: STUDENT COURSE EVALUATION

The 23 applicants were asked to evaluate the program by answering a series of questions. Below are the eight questions that were asked together with the applicant's rating choice. Comments from the applicants are also included.

1. Please rate the instructor's mastery of the subject.

Poor: 1 **Fair: 0** **Adequate: 0.5** **Good: 3** **Excellent: 18.5**

"They were very nice and they taught things well."

"They were very good at getting their information across to me. In my opinion, they really knew what they were talking about and had a great supply of information."

"His lecture should have included more physiology, anatomy and a bit less about heat detection."

'I felt it was too compact."

"This course had <u>two</u> instructors. One was absolutely fabulous, the other one was terribly poor."

"Well educated in their fields."

"First part, I felt a little blown out of the water, but was much more confident going into third week to the end."

"They both knew a great deal. However, some of it was not exactly necessary for milking cows. It may have made more sense on the farm."

"There were two instructors, both very knowledgeable. The veterinarian's presentation was far too advanced for the program. He seemed unable to meet the needs of the average participant in this particular program."

2. Was the instructor prepared for the workshop?

Always well prepared: 22 **Usually well prepared: 1**

"They never came unprepared."

"They were very well prepared."

"They went above and beyond their duty, I thought. They went to a lot of trouble to bring specimens, etc."

"Enjoyed the hands-on part of classes."

"Some info was a little out of the league of a milker, mainly the veterinarian info. Again, I think more practical experience on the farm would be better."

"The vet was not prepared with appropriate information. One was well prepared with pertinent information, and also had an excellent delivery."

3. How well did this program meet your expectations?

Inadequate: 0 **Adequate: 2** **Satisfying: 6** **Very satisfying: 15**

"I obtained more knowledge than I expected."

"Would have liked more of being able to work with and actually milk the cows."

"I would like to see more farm time with hands-on experience and actual viewing of situations."

"I learned a great deal about the dairy business. I enjoyed it!"

"I wish more happened out of the classroom and in a barn."

"A good job for the first time offered. Program has much potential with some adjustments."

"Very satisfied, because I had no idea what I was really expecting."

"I would have liked to milk a few more cows."

"I learned a lot."

"I learned a lot from this class. It was very satisfying to me."

"His lectures more than made up for the deficiencies of the first few lectures. The experience at Cornell was excellent and exactly met the demands of a course such as this."

"I liked it."

4. Was this program pertinent to your needs and interests?

Yes: 23 **No: 0**

5. Was the class size satisfactory?

Yes: 23 **No: 0**

6. Were the number of sessions appropriate?

Yes: 19 **No: 4**

If not, please comment.

"I felt that there should have been more class so that each class wasn't so compact with information."

"A couple too many held in a classroom."

"The topic was so interesting and opened so many areas of interest, I would like a follow-up."

"Maybe one more for milking practice."

7. Were the classroom facilities adequate?

Yes: 22 **No: 1**

If not, please comment.

"I thought they were quite crowded actually. Difficult to move around and hard to see sometimes."

8. Would you enroll in a more advanced, follow-up program?

Yes: 20 **No: 3**

If not, please comment.

"No way to get there."

"Not at this time. I would like work experience first!"

"Not without extensive field work."

Appendix IV: FARMER EVALUATION

The farmers who provided the job shadowing part of the program were asked to evaluate the students with whom they worked. Six farmers used a free stall milking system. Sixteen farmers used a tie stall milking system. Their appraisals and comments follow.

Free Stall Barn

1. **Did the student arrive on time?**

   Yes: 6 **No: 0**

2. **Was the student receptive to learning the skills?**

   Yes: 5 **No: 1**

3. **Did the student display knowledge of proper milking procedures?**

   Yes: 5 **Some: 1**

4. **Would you hire this person?**

   Yes: 5 **No: Answer: 1**

   Why?

   "We already have!"

   "Seemed dependable and a fast learner."

   "Excellent personality."

   "He seemed to pick up the procedure very well."

5. **What was your general feeling about this person?**

   "He was intelligent but could not learn job."

   "She did a good job. She needs a little more patience in letting some of the cows milk a little longer."

   "He was willing to listen and I feel he would work out good milking."

"She is a very gentle and conscientious person."

"He tries hard. Needs to improve cleanliness."

"We enjoyed her presence."

6. **Would you be interested in training for your present employees?**

   Yes: 0 No: 6

7. **Are you presently or will you be looking for new employees?**

   Yes: 1 No: 5

8. **Additional Comments.**

   "We are a two person partnership and we don't hire any help. I referred him to another farmer who was looking for help."

   "I questioned her about the material covered in class. Seemed good. We like to train our own people our way and are not interested in sending them to the class."

Tie Stall Barn

1. **Did the student arrive on time?**

   Yes: 14 Not Always: 1 No: 1

2. **Was the student receptive to leaning the skills?"**

   Yes: 15 No: 1

3. **Did the student display knowledge of proper milking procedures?**

   Yes: 13 Not Always: 2 No: 1

4. **Would you hire this person if you had an opening?**

   Yes: 9 Perhaps: 1 No Answer: 2 No: 4

   Why?

   "He is a very conscientious worker. I don't have to worry about how things are going to get done. He is also very pleasant to work with."

"I did!"

"She is working every other Saturday and is interested in a full-time job in the fall for a few years."

"Seemed eager to learn, receptive to what we told him, worked well around the cows; excellent attitude."

"He works for us every other Saturday and every other Sunday. He plans on helping us with hay and crops."

"Because he tried real hard and was slow."

"Yes, after more experience."

Why Not?

"Milking in our barn would be difficult for her as our milk line is so high it's hard for her to reach."

"We need someone full-time."

"He just wasn't able to perform his jobs quickly enough."

"Needs experience. Being on time is a 'biggie' here."

"He seemed mentally retarded and I believe employment of any kind would require the simplest of duties."

5. **What was your general feeling about this person?**

"He was knowledgeable and handled himself well around the animals."

"He is a good kid."

"Good person."

"He is a very nice and open person. Easy to get along with. We enjoy having him work for us."

"Seemed to be a nice person who was eager to learn, willing to listen, wanted to do a good job."

"Very easy to get along with."

"Good person."

"We have known him for over a year and are comfortable with him and the quality of his work."

"Enthusiastic, loved animals, had a desire to learn."

"I think he was a nice person and certainly meant well, but his abilities are too limited for a job on a farm."

"Good."

"He tried very hard, he was interested and he had a nice manner about him but physically he just didn't seem to be able to keep up."

"Nice personality but not aggressive."

6. **Would you be interested in training for your present employees?**

   Yes: 3 Perhaps: 3 No Answer: 2 No: 8

7. **What circumstances would be acceptable? (Time of year,time of day, program cost. How much would you pay?)**

   "All."

   "Spring from 7:00 to 5:00 p.m. $4 to $5 an hour."

8. **Are you presently or will you be looking for new employees"**

   Yes: 4 No: 9 No Answer: 3

9. **Additional Comments**

   "I would be willing to let more students shadow me but it would be easier if I knew exactly what they had covered in the classroom first. I think that this program is a good idea."

   "I'm glad we were picked to help with this training program. It has given us time off and help when needed."

   "I think that this is a good program and would be willing to do more."

"I didn't have enough time to work personally with him. I expected him to have had more experience. He was really only here for four days; not enough time to really say much. He really didn't appear to be the farmer type."

"We were very pleased to have an opportunity to work with him, and hope that it was a learning and rewarding experience for him. Sunday evening, he milked on his own and did an excellent job. He was quick to ask when he wasn't sure if a cow was completely milked out, but in each case he had done a good job, as good as we who are familiar with the cows could have done."

Each farmer was also asked to rate the work performance of the student on a scale of 1-10. 1 was very poor and 10 was excellent. The class averaged 8.2. Here are some of the comments made by individual farmers who participated in the program.

"He picked things up right away. I hired him on the spot."

"I'm glad we were picked to help with this training program. It has given us time off and help when needed."

"She is a quick learner. She is working every other Saturday and we are thinking about hiring her full-time in the fall."

"He seemed to pick up the procedure very well."

"He was willing to listen and I feel he would work out good milking."

"He was eager to learn; he listened to what we said. He has a good attitude."

"He has helped us out a lot and we are glad to have him."

"She did a good job and didn't seem to have any problem learning what we do around here."

"He is a good kid. I hired him because he tried real hard."

"He tries hard--we hired him."

"He was knowledgeable and handled himself well around the animals."

"Seemed dependable and was a fast learner. I enjoyed her presence."

"She was very receptive to learning the skills."

"He knew the proper procedures but he wasn't always able to perform them fast enough."

"She was enthusiastic, loved animals and had a desire to learn."

The preceding statements were made by farm employers about people with minimal farm backgrounds. The program gave them enough basic information to make good first impressions and receive job offers. Eight potential trainees have inquired about the program since it ended.

Other Agricultural Economics Extension Publications

No. 90-27	Farm Income Tax Management and Reporting	George L. Casler Stuart F. Smith
No. 90-28	Pro-Dairy Financial Data Collection Workbook	Jonas B. Kauffman Stuart F. Smith
No. 90-29	Changes in the New York State Farm Minimum Wage Law	Thomas R. Maloney Kay Embrey
No. 90-30	New York Economic Handbook 1991 Agricultural Situation and Outlook	Extension Staff
No. 91-1	Estimating Principal Due in Next 12 Months with Monthly Payments	Eddy L. LaDue
No. 91-2	Micro DFBS A Guide to Processing Dairy Farm Business Summaries in County and Regional Extension Offices for Micro DFBS v 2.5	Linda D. Putnam Wayne A. Knoblauch Stuart F. Smith
No. 91-3	The National Dry Onion Market: A Monthly Analysis of New York State's Competitive Position in Eastern Markets	Enrique Figueroa
No. 91-4	Property Tax Relief from New York's Farmland Assessments and Agricultural Buildings Exemptions in the 1980's	Richard N. Boisvert Nelson L. Bills
No. 91-5	Dairy Farm Cash Flow, Debt Repayment Ability and Financial Analysis	George L. Casler
No. 91-6	Agricultural District Legislation in New York, as Amended through 1990	Kenneth Gardner Nelson Bills
No. 91-7	CAPVEST A Computer Program to Analyze Profitability and Financial Feasibility of Major Capital Investments	George Casler Eddy L. LaDue